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UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Schinnerer, et al.

Confirmation No.: 6675

Application No.: 09/715,600

Examiner: R. Manucher

Filing Date: 11/17/00

Group Art Unit: 2676

Title: Systems and Methods for Rendering Active Stereo Graphical Data as Passive Stereo

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TRANSMITTAL OF APPEAL BRIEF

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Transmitted herewith in **triplicate** is the Appeal Brief in this application with respect to the Notice of Appeal filed on 1/5/04.

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(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

() (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

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(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **08-2025** the sum of \$330.00. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Respectfully submitted,

Schinnerer, et al.

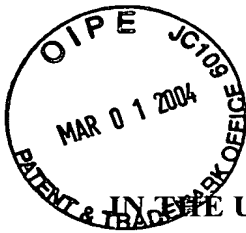
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In Re Application of:

Schinnerer, et al.

Serial No.: 09/715,600 ✓

Filed: 11/17/00

Group Art Unit: 2676

Examiner: Manucher Rahmjoo

Docket No. 10005282-1

For: **SYSTEMS AND METHODS FOR
RENDERING ACTIVE STEREO GRAPHICAL
DATA AS PASSIVE STEREO**

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APPEAL BRIEF UNDER 37 C.F.R. §1.192

Assistant Commissioner for Patents
Mail Stop: AF (Appeal Brief)
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief under 37 C.F.R. §1.192 is submitted in triplicate in support of the Notice of Appeal filed herewith, responding to the Advisory Action mailed December 17, 2003.

It is not believed that extensions of time are required, beyond those, which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor are hereby authorized to be charged to Hewlett-Packard Company's Deposit Account No 08-2025.

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Stephanie Riley

I. REAL PARTY-IN-INTEREST

The real party-in-interest is the assignee, Hewlett-Packard Development Company, LP.

II. RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences that will affect or be affected by a decision in this appeal.

III. STATUS OF CLAIMS

Claims 1 - 16 stand finally rejected. No claims have been allowed. The final rejection of claims 1 - 16 is appealed.

IV. STATUS OF AMENDMENTS

This application is a U.S. utility application entitled "Systems And Methods For Rendering Active Stereo Graphical Data As Passive Stereo," having Serial No. 09/715,600, filed November 17, 2000.

In the First Office Action, the Examiner rejected claims 1 - 19. Applicants submitted a "Response" on June 4, 2003, in which there were no amendments. In the Second Office Action, the Examiner rejected claims 1 - 19. Applicants submitted a "Second Response" on September 18, 2003, in which no claim amendments were made. In a Third Office Action, the Examiner rejected claims 1 - 19. Applicants submitted a "Third Response" on December 1, 2003, in which claims 17 - 19 were canceled without waiver, disclaimer or prejudice, in order to refine the issues for appeal. The claims in the attached Appendix reflect the present state of pending claims 1 - 16.

V. SUMMARY OF THE INVENTION

Briefly described, the present invention relates to techniques for rendering graphical data. In this regard, embodiments of the present invention may be construed as providing methods for converting active stereo video data into passive stereo video data. Active stereo video data contains right channel pixel data and left channel pixel data, and is configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo. In this regard, a preferred method includes receiving the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered, re-sequencing the right channel pixel data and the left channel pixel data, and simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image (536, 537) to be rendered in passive stereo. Other embodiments of the present invention may be construed as providing devices (50) for converting active stereo video data into passive stereo video data.

VI. ISSUES

The following issue needs to be decided as part of this appeal:

A. Whether claims 1 - 16 stand properly rejected under 35 U.S.C. §102(b) as being anticipated by *Garcia* (U.S. Patent 5,510,832), hereinafter "*Garcia*."

VII. GROUPING OF CLAIMS

Applicants have grouped the pending claims 1 – 16 into the following claim group:

(1) Claims 1 – 16;

thus, the claims stand or fall together.

VIII. THE ARGUMENT

The Applicants respectfully request that the Board overturn the rejection of claims 1 – 16 for at least the reasons discussed below.

A. **The rejection of claims 1 – 16 under 35 U.S.C. §102(b) as being anticipated by *Garcia* is improper**

For a proper rejection under 35 U.S.C. §102(b), a reference must teach, either expressly or inherently, all of the features/limitations of a claim. For at least the reasons indicated below, Applicants respectfully assert that *Garcia* is legally deficient for the purpose of anticipating the pending claims. Therefore, Applicants respectfully traverse the rejection and respectfully request that the Board overturn the rejection of claims 1 – 16.

For the purpose of this appeal, Applicants have chosen claim 1 as an exemplary claim, about which the impropriety of the pending rejection will be discussed.

B. **The *Garcia* Reference**

In general, *Garcia* teaches a synthesized stereoscopic imaging system and method that involves the use of a single, two-dimensional, monocular source video signal that is converted to an active stereo video signal. For instance, Applicant respectfully refers the Board's attention to *Garcia*, column 6, lines 17 – 32, which discloses:

This is accomplished by methods including the steps of: acquiring and digitization of a two-dimensional single monocular source video signal (*e.g.*, standard PAS, NTSC, or equivalent video); digital electronic implementation and improvements to the DeepVision process for enhancing depth information; ***production of two channels of electronically processed video, one alternatively to be delivered to the right eye for viewing, the other to be subsequently delivered to the left eye***; converting the electronically processed video signals to a frame- or field-multiplexed stereoscopic display signal; displaying the multiplexed video signal in human-viewable form on a single-screen video display; ***viewing the video display with glasses or the like adapted***

for alternate left-eye, right-eye viewing; and controlling alternate left-eye, right-eye shuttering of the glasses in synchronism with display of the frame-or field-multiplexed video signal.
(Emphasis Added).

As set forth above, *Garcia's* disclosure of the "production of two channels of electronically processed video, one alternately to be delivered to the right eye for viewing, the other to be subsequently delivered to the left eye," meets the definition of "active stereo." Furthermore, the aforementioned disclosure of *Garcia* meets the express definition of "active stereo" provided in Applicants' written description, as will be described below.

C. Claim 1 of the Application

Claim 1 recites:

1. *A method for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said method comprising the steps of:*
receiving the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered;
re-sequencing the right channel pixel data and the left channel pixel data; and
simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data *for displaying the image to be rendered in passive stereo.*
(Emphasis Added).

Applicants respectfully assert that *Garcia* does not teach or otherwise disclose at least the features emphasized above in claim 1. Therefore, Applicants respectfully assert that the rejection of claim 1 is improper and that claim 1 is in condition for allowance.

D. The Terms “Active Stereo” and “Passive Stereo” Recited in Applicants’ Claims have been Misconstrued

Applicants respectfully assert that the terms “active stereo” and “passive stereo” have not been afforded their proper meanings. Specifically, Applicants respectfully assert that *Garcia* has been misconstrued and has been misrepresented as allegedly teaching active stereo and passive stereo despite Applicants’ use of those terms in accordance with express definitions provided in the written description portion of their application.

1. Applicants are Entitled to be Their Own Lexicographers

As set forth in MPEP §2173.01, it is a fundamental principal that “Applicants are their own lexicographers. They can define in the claims whatever they regard as their invention essentially in whatever terms they choose so long as the terms are not used in ways that are contrary to accepted meanings in the art.” With respect to this application, the Applicants have respectfully asserted their rights to be their own lexicographers, in that they have disclosed and expressly defined the terms “active stereo” and “passive stereo” in their written description and have recited these terms in the claims.

It is respectfully noted that Applicants overcame a previous rejection under 35 U.S.C. §112, second paragraph, based on the use of the terms “active stereo” and “passive stereo” as being indefinite. Applicants traversed the rejection and respectfully referred the Examiner’s attention to the written description at page 59, lines 1 – 10, wherein the terms “active stereo” and “passive stereo” are expressly defined. Since the terms were expressly defined in the written description and the terms themselves are not contrary to accepted meanings in the art, the Examiner withdrew the rejection under 35 U.S.C. §112, second paragraph. Since Applicants respectfully assert that use of the terms “active stereo” and “passive stereo” is

proper, these terms should be interpreted in accordance with Applicants' express definitions during examination.

2. Applicants Provided Express Definitions for the Claim Terms "Active Stereo" and "Passive Stereo" in the Written Description

As mentioned before, Applicants provided express definitions for the claim terms "active stereo" and "passive stereo" in the written description. In this regard, Applicants respectfully refer the Board's attention to MPEP 2173.05(a), which provides:

Applicants need not confine themselves to the terminology used in the prior art, but are required to make clear and precise the terms that are used to define the invention whereby the meets and bounds of the claim invention can be ascertained. During patent examination, the pending claims must be given the broadest reasonable interpretation consistent with the specification. (citations omitted). *When the specification states the meaning that a term in a claim is intended to have, the claim is examined using that meaning, in order to achieve a complete exploration of the Applicant's invention and its relation to the prior art.* (citations omitted). (Emphasis added).

In the instant case, the specification expressly states the meanings that the claim terms "active stereo" and "passive stereo" are intended to convey. Therefore, Applicants respectfully assert that it is improper to attribute any other meaning to these terms during examination as such would be contrary to the intent of the "broadest reasonable interpretation" standard.

Specifically, Applicants have defined "active stereo" as follows:

As utilized herein, the term "active stereo" refers to the presentation of alternating channels, *i.e.*, one channel being associated with the left eye of a viewer (the "left channel") and the other channel being associated with the right eye of the viewer (the "right channel"), of video display. (Application, p. 59, lines 1 – 4).

Applicants have defined the term “passive stereo” as follows:

Additionally, as utilized herein, the term “passive stereo” refers to the presentation of simultaneous channels, *i.e.*, one channel being associated with the left eye of a viewer (the “left channel”) and the other channel being associated with the right eye of the viewer (the “right channel”), of video display.
(Application, p. 59, lines 7 – 10).

However, it appears that the Office Action has attributed Applicants’ definition of “active stereo” to the term “passive stereo” and, as such, has misconstrued the teachings of the prior art. The Advisory Action of December 17, 2003 attempts to justify this position by asserting that “even though the claims are interpreted in light of the Specification, limitations from the Specification are not read into the claims.” Although Applicants respectfully agree with this general proposition, this general proposition seems to have been misapplied.

3. Interpreting a Claim in Accordance with an Express Definition Provided in the Written Description is not the same as Impermissibly Reading a Limitation from the Specification into a Claim

Applicants respectfully assert that the Office Action has confused what would be considered an impermissible reading of a limitation from the Specification into a claim with properly interpreting a claim in accordance with an express definition provided in the written description. With respect to the pending claims, and as discussed above, the terms “active stereo” and “passive stereo” have been used. As also set forth above, Applicants were entitled to use these terms as these terms are expressly defined, are not contrary to accepted meanings in the art, and are unambiguous. Interpretation of these terms alone does not import impermissible limitations into the claims at issue. The following hypothetical is provided to illustrate a situation in which a limitation from a Specification could be impermissibly read into one of Applicants’ claims. By way of example, Applicants provided an example

implementation of active stereo following its express definition. In particular, the written description discloses:

Typically, active stereo is facilitated by the use of headgear that is synchronized with the display device so that the viewer views one channel of the video display with the left eye and the other channel with the right eye.

(Application, page 59, lines 4 – 6).

Applicants respectfully assert that it would be impermissible to read the additional limitations of “headgear that is synchronized with the display device” and/or the “display device” into a claim in order to distinguish that claim over the prior art. However, attributing the express definition to the term “active stereo” is not impermissible for the reasons described above.

A similar case also can be made with respect to the term “passive stereo.” By way of example, the Applicants have provided the example teaching “[t]ypically, passive stereo is facilitated by the use of headgear which is configured to allow each eye of the viewer to view only one of the simultaneously displayed channels of video.” In this case, it would be impermissible to read the “headgear” limitation from the Specification into a claim that recites passive stereo in order to distinguish that claim from the prior art. However, the express definition of the term passive stereo must properly be used during examination.

4. The Office Action Fails to Present a Prima Facie Case of Anticipation

The Office Action fails to point out, even in general terms, a teaching in *Garcia* that is being construed as active stereo, and a teaching that is being construed as passive stereo. Specifically, *Garcia* teaches the conversion of a two-dimensional single monocular source video signal into active stereo. Moreover, *Garcia* clearly does not involve the use of “passive stereo” as defined by the Applicants.

Further evidence that *Garcia* involves the presentation of active stereo can be found at *Garcia*, column 12, line 12 - column 13, line 58. As described therein, the video provided by *Garcia* is “viewed through synchronous electronic glasses 300, the left eye will see one image, *i.e.*, frame F1, with a negative spatial displacement and the right eye will see the other image, *i.e.*, frame F2, with the opposite spatial displacement.” *Garcia*, column 12, lines 29 – 34. As described at column 7, line 61 – column 8, line 14, glasses 300 are shuttered glasses, which include lenses that are individually controlled so that an observer can only see through one of the lenses at a time. This also clearly refers to use of active stereo.

Since *Garcia* does not involve the use of passive stereo and expressly teaches, unlike the limitations recited in Applicants’ pending claims, the conversion of a single, two-dimensional monocular source video signal into active stereo, Applicants respectfully assert that the rejection is improper and should be removed.

5. Applicants Claim Recites Unambiguous Language that Bolsters the Meanings of Claim Terms and Express Definitions Provided in the Written Description

Claim 1 is set forth again for convenience, and recites:

1. *A method for converting active stereo video data into passive stereo video data*, the active stereo video data containing right channel pixel data and left channel pixel data, *the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo*, said method comprising the steps of:
receiving the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered;
re-sequencing the right channel pixel data and the left channel pixel data; and
simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data *for displaying the image to be rendered in passive stereo*.
(Emphasis Added).

Applicants respectfully assert that much of the language recited in claim 1 has been disregarded for the purpose of examination. For instance, the preamble of claim 1 recites “a method for converting active stereo video data into passive stereo video data.” It is axiomatic that the preamble of a claim is read as a limitation if the language of the preamble breathes life into the claim. In this case, Applicants respectfully assert that the preamble language breathes life into the claim and, therefore, the preamble language should be considered during examination. Clearly, Garcia does not involve “[a] method for converting active stereo video data into passive stereo video data” as recited in claim 1.

Also, the preamble of claim 1 recites that “the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo.” Thus, although Applicants respectfully assert that an express definition for the term “active stereo” has been provided in the written description, and that that definition is dispositive of the meaning of that term, Applicants have included clear and unambiguous language in the claim itself that bolsters the express definition for “active stereo” provided in the written description.

This is also the case for the term passive stereo. In this regard, claim 1 recites “simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.” Thus, Applicants have included clear and unambiguous language in the claim itself that bolsters the express definition for “passive stereo” provided in the written description.

Respectfully turning the Board’s attention to the body of claim 1, Applicants respectfully assert that other language of the claim has not been considered properly for the purpose of examination. For example, claim 1 recites “receiving the active stereo video

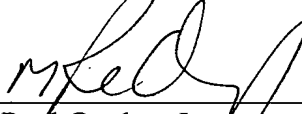
data . . . , re-sequencing the right channel pixel data and the left channel pixel data; and simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.” Applicants respectfully assert that since *Garcia* does not teach or otherwise disclose at least these features/limitations, that claim 1 has been improperly rejected and is in condition for allowance. Since dependent claims 2 – 10 incorporate all the features/limitations of claim 1, Applicants respectfully assert that these claims also are in condition for allowance.

Furthermore, for reasons similar to those described above with respect to claim 1, Applicants respectfully assert that independent claims 11 and 15 also are improperly rejected and are in condition for allowance. Since dependent claims 12 – 14 and 16 incorporate the features/limitations of either claim 11 or claim 15, Applicants respectfully assert that these claims also are in condition for allowance.

CONCLUSION

Applicants respectfully request that the Board of Appeals overturn the Examiner's rejection of all pending claims 1 - 16 and allow claims 1 – 16 for the reasons indicated.

Respectfully submitted,



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APPENDIX TO THE APPEAL BRIEF
UNDER 37 C.F.R. §1.192

The Appendix is incorporated into the foregoing Appeal Brief under 37 C.F.R. §1.192.

THE CLAIMS

1. (Original) A method for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said method comprising the steps of:

receiving the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered;

re-sequencing the right channel pixel data and the left channel pixel data; and

simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.

2. (Original) The method of claim 1, wherein a frame rate of the pixel data simultaneously output for displaying the image to be rendered in passive stereo is approximately one half of a frame rate of the pixel data of the active stereo video data.

3. (Original) The method of claim 1, wherein the step of receiving the active stereo video data comprises the step of:

receiving the active stereo video data from multiple digital video data streams, each of the multiple digital video data streams being provided by a graphics pipeline, each graphics pipeline being configured to process pixel data corresponding to at least a portion of the image to be rendered.

4. (Original) The method of claim 1, further comprising the step of:
providing a first left channel frame buffer, a second left channel frame buffer, a first right channel frame buffer, and a second right channel frame buffer; and
wherein the step of re-sequencing the right channel pixel data and the left channel pixel data comprises the step of:

allocating the right channel pixel data and the left channel pixel data to the first left channel frame buffer, the second left channel frame buffer, the first right channel frame buffer, and the second right channel frame buffer.

5. (Original) The method of claim 1, wherein the step of simultaneously outputting corresponding frames comprises the steps of:

buffering a first frame of the right channel pixel data;

buffering a first frame of the left channel pixel data;

simultaneously providing the first frame of the right channel pixel data and the first frame of the left channel pixel data for displaying the image to be rendered;

determining whether a second frame of the right channel pixel data and a second frame of left channel pixel data are ready for simultaneously providing; and

if the second frame of the right channel pixel data and the second frame of left channel pixel data are not ready for simultaneously providing, again simultaneously providing the first frame of the right channel pixel data and the first frame of the left channel pixel data.

6. (Original) The method of claim 3, wherein the step of receiving the active stereo video data from multiple digital video data streams comprises the steps of:

receiving a first of the multiple digital video data streams containing three-dimensional pixel data corresponding to the image to be rendered; and

receiving a second of the multiple digital video data streams containing two-dimensional pixel data corresponding to the image to be rendered; and

wherein the step of re-sequencing the right channel pixel data and the left channel pixel data comprises the step of:

combining the two-dimensional pixel data and the three-dimensional pixel data.

7. (Original) The method of claim 3, wherein the step of combining the two-dimensional pixel data and the three-dimensional pixel data comprises the step of:

replacing at least a portion of the pixel data provided by the second of the multiple digital video data streams with at least a portion of the pixel data provided by the first of the multiple digital video data streams.

8. (Original) The method of claim 3, wherein the step of allocating the right channel pixel data and the left channel pixel data comprises the step of:

utilizing chroma-key values for allocating the right channel pixel data and the left channel pixel data

9. (Original) The method of claim 3, wherein the step of allocating the right channel pixel data and the left channel pixel data comprises the step of:

utilizing overscanned information contained in the active stereo video data for allocating the right channel pixel data and the left channel pixel data.

10. (Original) The method of claim 9, wherein the step of utilizing overscanned information comprises the step of:

utilizing overscanned information contained in the active stereo video data for allocating the right channel pixel data to one of various right channel buffers, and the left channel pixel data to one of various left channel buffers.

11. (Original) A device for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said device comprising:

means for receiving the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered;

means for re-sequencing the right channel pixel data and the left channel pixel data;
and

means for simultaneously outputting corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.

12. (Original) The device of claim 11, wherein a frame rate of the pixel data simultaneously output for displaying the image to be rendered in passive stereo is approximately one half of a frame rate of the pixel data of the active stereo video data.

13. (Original) The device of claim 11, further comprising:

a first left channel frame buffer;

a second left channel frame buffer;

a first right channel frame buffer;

a second right channel frame buffer; and

means for allocating the right channel pixel data and the left channel pixel data to said first left channel frame buffer, said second left channel frame buffer, said first right channel frame buffer, and said second right channel frame buffer.

14. (Original) The device of claim 11, further comprising:

means for determining whether a second frame of the right channel pixel data and a second frame of left channel pixel data are ready for simultaneously providing; and

means for simultaneously re-providing a first frame of the right channel pixel data and a first frame of the left channel pixel data if the second frame of the right channel pixel data and the second frame of left channel pixel data are not ready for simultaneously providing.

15. (Original) A device for converting active stereo video data into passive stereo video data, the active stereo video data containing right channel pixel data and left channel pixel data, the active stereo video data being configured to enable alternate output of corresponding frames of the right channel pixel data and the left channel pixel data for displaying an image to be rendered in active stereo, said device comprising:

logic configured to receive the active stereo video data containing the right channel pixel data and the left channel pixel data corresponding to the image to be rendered;

logic configured to re-sequence the right channel pixel data and the left channel pixel data; and

logic configured to simultaneously output corresponding frames of the right channel pixel data and the left channel pixel data for displaying the image to be rendered in passive stereo.

16. (Original) The device of claim 15, further comprising:

logic configured to determine whether a second frame of the right channel pixel data and a second frame of left channel pixel data are ready for simultaneously providing; and

logic configured to simultaneously re-provide a first frame of the right channel pixel data and a first frame of the left channel pixel data if the second frame of the right channel pixel data and the second frame of left channel pixel data are not ready for simultaneously providing.

17. – 19. (Canceled)